CLAIMS

What is claimed is:

1. A calibration circuit for outputting an average calibration value used in an image-capture apparatus, said calibration circuit comprising:

difference means accepting a plurality of digital signals from capturing a pixel of a calibration chart, said difference means for operating each said digital signal with subtracting a base value, whereby filters any aberrant said digital signal;

divider means accepting said digital signals for operating each said digital signal with dividing a number of scanned times, whereby prevents an operation of any said signal from overflowing; and

direct average means accepting said digital signals for summing said digital signals and then dividing said number of scanned times, whereby speeds a calibration operation.

2. The calibration circuit according to claim 1 further comprising a round-value means accepting said digital signals for operating each said digital signal with adding a parameter value and dividing said number of scanned times, whereby prevents said operation of any said digital signal from truncation.

3. The calibration circuit according to claim 1, wherein said difference means comprises generating said average calibration value by

dividing a summation of each said digital signal subtracting said base value by said number of scanned times and whereby is added said base value up.

4. The calibration circuit according to claim 1, wherein said difference means comprises comparing each said digital signal with a level-range value that determines a reasonable bandwidth of said digital signals.

5. The calibration circuit according to claim 1, wherein said divider means comprises generating said average calibrating value by adding each said digital signal divided by said number of scanned times up.

6. The calibration circuit according to claim 1, wherein said number of scanned times is at least 2.

7. A calibration system used in a scanner, said calibration system comprising:

memory means for storing at least a first digital signal from scanning a pixel of a calibration chart by a first time;

difference means accepting said first digital signal and at least a second digital signal from scanning said pixel, said difference means for operating a first summation of said first digital signal subtracting a base value and said second digital signal subtracting said base value, said difference means for replacing said first digital signal in said memory

means by said first summation, and whereby filters any aberrant said digital signal;

divider means for getting a second summation of said first digital signal divided by a number of scanned times and said second digital signal divided by said number of scanned times, said divider means for replacing said first digital signal in said memory means by said second summation, and whereby prevents an operation of any said signal from overflowing; and

direct average means for getting a third summation of said first digital signal and said second digital signal, and replacing said first digital signal in said memory means by said third summation, and whereby speeds a calibration operation.

8. The system according to claim 7 further comprising a round-value means for a first addition value of said first digital signal and a parameter value and a second addition value of said second digital signal and said parameter value, and said round-value means for getting a fourth summation of said first addition value and said second addition value.

9. The system according to claim 8, wherein said round-value means comprises replacing said first digital signal in said memory means by said fourth summation, and whereby prevents said operation of any said digital signal from truncation.

10. The system according to claim 7, wherein said difference

means comprises generating an average calibration value by dividing said first summation by said number of scanned times and whereby is added said base value up.

11. The system according to claim 7, wherein said difference means comprises comparing said first digital signal with a level-range value that determines a reasonable bandwidth of said first and second digital signals, and comparing said second digital signal with said level-range value.

12. The system according to claim 7, wherein said divider means comprises assigning said second summation to an average calibrating value for said pixel.

13. A calibration method used in a scanner, said method comprising:

providing at least a first digital signal from scanning a pixel of calibration by a first time;

storing at least said first digital signal in a memory zone;

subjecting said first digital signal and at least a second digital signal from scanning said pixel to operating a first summation of said first digital signal subtracting a base value and said second digital signal subtracting said base value, and replacing said first digital signal in said memory zone by said first summation;

getting a second summation of said first digital signal divided by a number of scanned times and said second digital signal divided by said

number of scanned times, and replacing said first digital signal in said memory zone by said second summation; and

getting a third summation of said first digital signal and said second digital signal, and replacing said first digital signal in said memory means by said third summation.

14. The method according to claim 13 further comprising generating a first addition value of said first digital signal and a parameter value and a second addition value of said second digital signal and said parameter value, and getting a fourth summation of said first addition value and said second addition value.

15. The method according to claim 14, wherein said generating step comprises replacing said first digital signal in said memory zone by said fourth summation.

16. The method according to claim 13, wherein said subjecting step comprises generating an average calibration value for said pixel by dividing said first summation by said number of scanned times and whereby is added said base value up.

17. The method according to claim 13, wherein said subjecting step comprises comparing said first digital signal with a level-range value that determines a reasonable bandwidth of said first and second digital signals, and comparing said second digital signal with said level-range value.